

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 September 2005 (09.09.2005)

PCT

(10) International Publication Number
WO 2005/083458 A1

(51) International Patent Classification⁷: **G01R 33/36**

(21) International Application Number:
PCT/CA2005/000265

(22) International Filing Date: 24 February 2005 (24.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/547,430 26 February 2004 (26.02.2004) US

(71) Applicant (for all designated States except US): **NATIONAL RESEARCH COUNCIL OF CANADA** [CA/CA]; Intellectual Property Services Office, Building M-58 1200 Montreal Road, Ottawa, Ontario K1A 0R6 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **HOULT, David, Ian**, [GB/CA]; 28 Smithfield Avenue, Winnipeg, Manitoba R2V 0B6 (CA).

(74) Agent: **ADE & COMPANY**; 1700-360 Main Street, Winnipeg, Manitoba R3C 3Z3 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

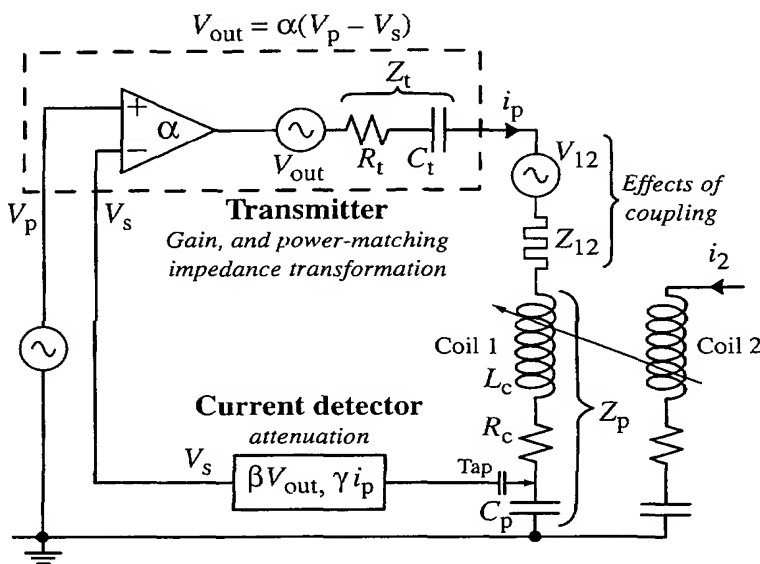
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD OF EFFECTING NUCLEAR MAGNETIC RESONANCE EXPERIMENTS USING CARTESIAN FEED-BACK



(57) Abstract: In nuclear magnetic resonance experiments, Cartesian electronic feedback is used to reduce substantially in transmission and/or reception the deleterious effects of sample-mediated and direct interactions between coils in an array of transmitting and/or receiving coils. The feedback is also used with single or multiple coils to maintain at essentially constant values the relationship between an input transmitter voltage and the magnetic resonance flip angle, and the relationship between transverse nuclear magnetisation and the strength of the free induction decay signal presented by a receiver for analysis, regardless of factors such as sample electrical conductivity.

WO 2005/083458 A1